

Digital Radio – An Overview

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Agenda

- ▶ Digital radio platforms
 - Eureka-147, DRM, HD Radio, Satellite radio
- ▶ DAB around the world
 - Europe, Asia-Pacific
- ▶ UK market, FTA mobile TV
- ▶ A look at regulation
- ▶ Issues behind slow adoption of DR
- ▶ Main drivers behind DR
- ▶ Key issues for discussion

A word about Eureka Research Ltd.

- ▶ Set up in late 2003
- ▶ Based in Bangor, North Wales, UK
- ▶ Market Research & Consultancy company
- ▶ Focused on digital radio (and mobile TV)
- ▶ Regular reports published on digital radio
- ▶ Consultancy assignments

The Eureka-147 Family of Standards

Basic description	DAB (MP2), DAB+ (AAC+), T-DMB Audio, T-DMB
Frequencies	VHF Band III, L-band
Deployment	Radio : Europe, Mobile TV: Asia
Multimedia/data capability	EPG, BWS, Visual Radio, Interactive data services via BIFS, TTI via TPEG, Music downloads, etc.
Receivers	340 radio receivers, 130 mobile TV receivers New products: Wi-Fi/DAB radios, Screen radios
Drivers	Strong political support (in some countries), regulatory initiatives, value-added services, new biz models, WorldDMB receiver profiles
Key issues	Consumer USP, transmission costs, monetizing DAB, vehicle penetration, competing platforms

Some DAB products ...



Roberts Radio Sound 43



Pure Digital Avanti

Some DAB products ...



Intempo iDAB for iPod



NanoDAB from TTP

Some DAB products ...



Pure Highway plug'n play car radio



iTheater DAB/DVB-T
USB receiver

Digital Radio Mondiale (DRM)

Basic description	Open standard, DRM30, DRM+
Frequencies	150 kHz–30 MHz (LW, MW, SW), up to 120 MHz
Deployment	Approximately 45 broadcasters, 650 hours daily
Potential applications	DRM: International broadcasting, local/rural SW broadcasting, FM re-broadcasting, DRM+ FM replacement
Receivers	Morphy Richards, Himalaya, TechniSat, MultyRadio, Uniwave
Key issues	Lack of market drivers, no USP, receiver availability and reception issues, competing platforms

New DRM receiver from Uniwave SAS



HD Radio

Basic description	Proprietary name for IBOC technology developed by Ibiquity for FM/AM
Deployment	US: 1 800 stations (900 multicast) Brazil, Mexico, Thailand, Europe?
Technological features	Multicast channels (HD2, HD3, etc.), CA, iTunes tagging, EPG, captioned text
Receivers	80+ models, iPod docks, battery-powered receivers, CA and PND receivers
Market drivers	Regulatory, technology push, receivers
Key issues	Service quality, USP, car manufacturers, AM IBOC, cost to broadcasters, royalty payments, competing platforms

Some HD Radio products ...



Coby Electronics HDR-700



DICE iTR-100A

Some HD Radio products ...



Dual Electronics XNAV43HD PND

Satellite radio

Basic description	Proprietary satellite/terrestrial repeater system for radio, multimedia and mobile TV. L-band and S-band frequencies
Players	Sirius XM (N. America), MBSat (S. Korea & Japan, WorldSpace (Africa, Asia, Europe)
Subscribers	Sirius XM (18 million), TU Media (1.85 million)
European market	European SDR standard, WorldSpace licensed in Italy, Germany, Switzerland
Key issues	High infrastructure & content costs, high debt & slowing subscriber growth, competition from free Internet-based media & FTA mobile TV services

DAB around the world – EMEA

Core countries

- UK
- Denmark
- Norway
- Switzerland

Re-launching

- Germany
- France
- Italy
- Netherlands
- Belgium
- Ireland
- Israel?
- Czech Republic
- Hungary
- Malta

Sitting on the fence

- Austria
- Portugal
- Spain
- Sweden?
- South Africa
- Turkey

DAB around the world – Asia pacific

Core countries

- South Korea
- China
- Singapore

Launching

- Australia

Plans

- Hong Kong
- Indonesia
- Malaysia
- New Zealand
- Taiwan
- Vietnam

A snapshot of the UK market

Coverage, stations & listening

- 90% population coverage
- 428 stations broadcast on 48 multiplexes
- 11% population listen via DAB
- 18% population listen via digital platforms

Receivers

- Installed base of 8.5 million receivers
- Market value £162 million (v £450 million analogue)
- 2008 receiver sales of 2.07 million (v 8 million analogue)
- Imagination (Pure), Frontier Silicon, Radioscape

Events in 2008

- A tumultuous year
- Second national DAB multiplex postponed
- Several commercial stations abandoned DAB platform
- DRWG proposals leading to Digital Britain report
- New DAB stations announced

Free-to-Air Mobile TV via T-DMB

Asia and Europe

- Asia – more interest in mobile TV than radio
- Europe – renewed interest in mobile TV by public broadcasters in some countries

Key issues

- Business model
- Mobile phone partners
- Mobile phone devices

Sources of revenue

- Advertising – can a FTA model work? (How long do consumers watch mobile TV?)
- TPEG services, interactive data services via BIFS
- Pay-TV channels

A look at regulation

Canada	DAB viewed as a replacement technology offering high-quality audio (5 radio channels @ 192 kbps). Incumbents have priority. Simulcast requirement with limited hours of DAB-only content allowed
United Kingdom	Beauty contest with priority on number of services and coverage proposed. Digital license for 12 years with 12 year automatic extension . Automatic renewal of FM license for 8 years. No simulcast requirement. Data 20-30% limit.
Australia	No new entrants for 6 years. No coverage and simulcast requirements. Incumbent broadcasters have rights of refusal to operate multiplexes.
France	T-DMB Audio , DRM and satellite radio adopted as official digital radio standards. Priority given to incumbents. No simulcast requirements. First country to issue receiver mandate

IBOC regulation in the US

No mandate	No mandatory conversion to IBOC by FCC
Audio quality	Audio quality of main digital channel should be “comparable” or better than the analogue channel
Multicast channels	Option 1: All multicast channels must carry advertising. Option 2: Main digital channel FTA, others subscription
Diversity of ownership	Incumbents increase number of radio channels. No new entrants!
HD Radio in Sirius XM	Proposal to mandate HD Radio receivers in all Sirius XM receivers
Mobile phones	Proposal to mandate FM receivers in all mobile phones.

The Digital Britain Report

Highlights

- ▶ DAB will be the primary distribution platform for digital radio
- ▶ Digital migration plan to be set up by government
- ▶ DAB coverage to equal FM
- ▶ New cars with DAB radios as standard from 2014
- ▶ Migration criteria met by 2015. Government announces date for digital migration

Migration criteria

- ▶ Listening – when 50% of all listening is on digital platforms
- ▶ Coverage – when national DAB multiplex equals FM coverage and local multiplexes provide 90% population coverage
- ▶ All national (+ some local) radio stations on DAB only from 2017

Receiver mandate in France

1st September 2010

- All radio receivers capable of displaying multimedia content must be equipped with a T-DMB Audio receiver
- Car receivers exempted.

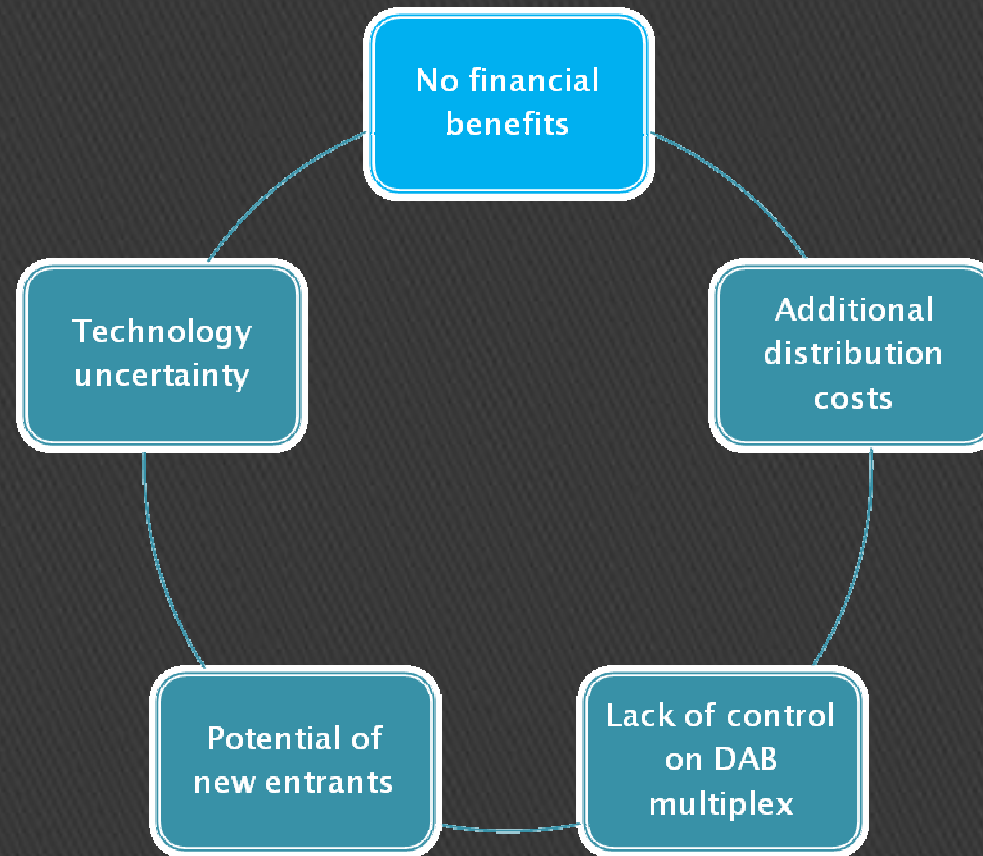
1st September 2012

- All new radio receivers must be capable of receiving T-DMB Audio broadcasts
- Car receivers exempted

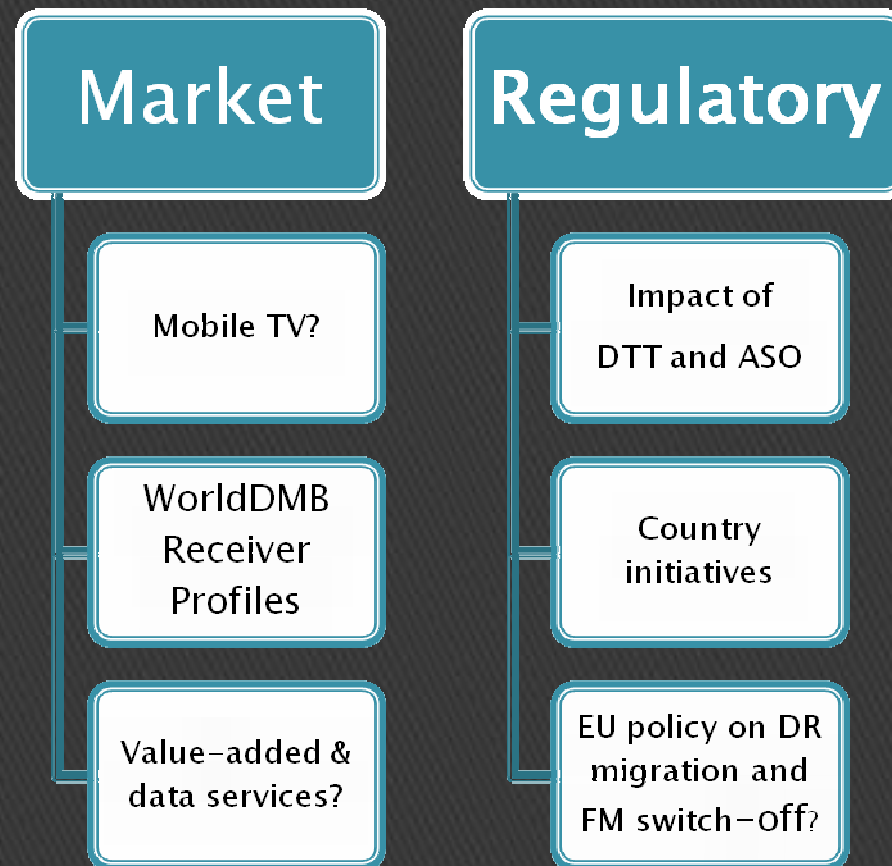
1st September 2013

- All new radio receivers (including car receivers) must be capable of receiving T-DMB Audio broadcasts

Issues behind slow adoption of DR



What are the drivers behind DR?





New multimedia opportunities?



Frontier Silicon's Touch-Screen Radio

New multimedia opportunities?



95.8 CAPITAL FM **LATEST ON THE TUBE**

BAKERLOO	Good	METROPOLITAN	Good
CENTRAL	Delays	NORTHERN	Good
CIRCLE	Good	PICCADILLY	Good
DISTRICT	Good	VICTORIA	Good
H'SMITH&CITY	Good	WATERLOO&CITY	Good
JUBILEE	Good		

NOW PLAYING  **Snow Patrol**
Chasing Cars

Screen Radio demonstrations

Key questions for discussion

- ▶ Do broadcasters really need an independent digital radio network?
- ▶ Can digital radio succeed without government intervention?
- ▶ Should the EC develop an EU-wide migration strategy and analogue radio switch-off plan. Is there the political will to do this?
- ▶ Can regulation “protect” smaller broadcasters on an Eureka-147 multiplex-based platform?
- ▶ What role should DRM/DRM+ (or HD Radio) play in the digital radio landscape in Europe?
- ▶ Radio on DTT networks. Is this a viable alternative for some countries? What are the regulatory implications? What are the business issues?

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